CONTROL LOGIC DESCRIPTION DOCUMENT
IC-410ND

Configuration # : 41G21C0

Input/output table:

Inputs	Qty	Outputs	Qty
Inside Temperature Probe	3	Inflatable Balloon	10
Chimney Temperature Probe	1	Chimney Activator	1
		Alarm	1

Required equipment:

Item	Description	Qty
IC-410ND	Intelligent Control, 4 Inputs/10 Outputs (Without LCD Display)	1
CM3-2	2 ON/OFF Stage Module 3 Amps	1
CIM-1	Curtain/Inlet Module	1
2004-1K	Temperature Probe (-21.1 to 75.9°C)	4

Configuration revision:

Version	Date	Modification
C0	2005/12/09	New, from 41G20F0.

1. INTRODUCTION

The IC-410ND is a programmable regulator that can be used in different types of buildings simply by changing its logic, called "configuration". The logic configuration is a program that creates a relationship between the inputs and the parameters to activate the outputs. This program is memorized in a module identified by a configuration number. We kindly ask you to mention this number when discussing with your supplier.

For proper installation and full understanding of your IC-410ND, it is important for you to read the **IC-410ND User's Manual** and this Control Logic Document. The User's Manual informs you on safety issues, warranty, sensors, adjustments of parameters and many other characteristics of the IC-410ND. However, this document explains all particularities of this configuration logic.

Definition

Throughout this document, the following terminology is used.

-DRT → **D**esired **R**oom **T**emperature. This is the temperature goal for the room and also the reference temperature for all relative settings. Note that the *DRT* is affected by the growth curve function, see also Growth Curve Function paragraph in the IC-410ND manual.

-RSP → **R**elative **S**et **P**oint. Number of degrees relative to the *DRT* where a function begins.

-Diff → Differential is the number of degrees changed before stopping the output. For example, with a differential = 1.0°C, the IC-410ND turns on a fan at 20.0°C when the temperature increases, but it will shut off at 19.0°C when the room is cooling down. The differential is necessary to avoid oscillations.

Expressions in *ITALICS* are user's parameters whereas expressions in `COURIER` are supervisor's parameter. Supervisor's parameters are read-only for the user.

Ventilation System Overview

This configuration controls 3 zones (A, B and C). Each zone is equipped with a temperature probe. Zone A and B each contain a balloon with 4 stages, zone C contains a balloon with 2 stages. There is also a drying logic for every zone. The chimney activator works with the chimney temperature.

IMPORTANT NOTES :

- The inlet **closes** when balloon inflates and **opens** when balloon deflates in natural ventilation.
- 2 stages of the same inflatable balloon can not activate to inflate or deflate at the same time. A fixed delay of 3 minutes will always separate the activation of each stage.
- The stages must have ascending RSP, the stage 1 must have the lowest RSP and stage 4 the highest RSP. **If done otherwise, the balloons will operate erratically**.

2. DESCRIPTION OF THE LOGIC

This configuration uses the Celsius degree.

Parameter 1

CLOCK

Give the time in 24-hour format.

F2: ***ADJUST MINUTES***

Adjust minutes for CLOCK function.

F3: ***ADJUST HOURS***

Adjust hours for CLOCK function.

Parameters 2-4:

TEMPERATURE ZONE A (B,C)

These parameters display the respective zone temperature. The TEMPERATURE ZONE A (B,C) is used to control the respective zone balloon. These parameters are displayed to the nearest 0.1°C from -21.1°C to 75.9°C.

F3: See note 1**.**

Parameter 5:

CHIMNEY TEMPERATURE

This parameter displays the chimney temperature. The CHIMNEY TEMPERATURE is used to control the chimney activator. This temperature is displayed to the nearest 0.1°C from -21.1°C to 75.9°C.

F3: See note 1**.**

Note 1: HI/LO

In addition to the readout of the probe, the parameter can record the lowest and highest values reached. To access the Hi/Lo function, press F3. To clear the respective Hi/Lo values, after pressing F3, press and hold the + and - buttons until CLR appears on the LED display.

Parameter 6:

DESIRED ROOM TEMPERATURE ZONE A (DRT ZONE A)

This parameter establishes the target room temperature zone A. The *DRT ZONE A* is used as a reference point for other relative set points (RSP) of zone A. This parameter also establishes the relative temperature at which inflatable balloon A stage 1 will deflate. When TEMPERATURE ZONE A is higher or equal to *DRT ZONE A*, balloon A stage 1 deflates (output deactivated) to allow air out. There is a 0.5°C fixed differential on this logic. There is a 3-minute delay between the deflation/inflation steps. Stage 2 RSP must be set higher than *DRT ZONE A*. This parameter is adjusted in 0.1°C increments from 0.0°C to 40.0°C.

Parameter 7:

DESIRED ROOM TEMPERATURE ZONE B (DRT ZONE B)

This parameter establishes the target room temperature zone B. The *DRT ZONE B* is used as a reference point for other relative set points (RSP) of zone B. This parameter also establishes the relative temperature at which inflatable balloon B stage 1 will deflate. When TEMPERATURE ZONE B is higher or equal to *DRT ZONE B*, balloon A stage 1 deflates (output deactivated) to allow air out. There is a 0.5°C fixed differential on this logic. There is a 3-minute delay between the deflation/inflation steps. Stage 2 RSP must be set higher than *DRT ZONE B*. This parameter is adjusted in 0.1°C increments from 0.0°C to 40.0°C.

Parameter 8:

DESIRED ROOM TEMPERATURE ZONE C (DRT ZONE C)

This parameter establishes the target room temperature zone C. The *DRT ZONE C* is used as a reference point for other relative set points (RSP) of zone C. This parameter also establishes the relative temperature at which inflatable balloon C stage 1 will deflate. When TEMPERATURE ZONE C is higher or equal to *DRT ZONE C*, balloon C stage 1 deflates (output deactivated) to allow air out. There is a 0.5°C fixed differential on this logic. There is a 3-minute delay between the deflation/inflation steps. Stage 2 RSP must be set higher than *DRT ZONE C*. This parameter is adjusted in 0.1°C increments from 0.0°C to 40.0°C.

Parameter 9:

F2(1): BALLOON A ST 2 RSP

This parameter establishes the relative temperature at which inflatable balloon A stage 2 will deflate. When TEMPERATURE ZONE A is higher than or equal to *DRT ZONE A* + BALLOON A ST 2 RSP, balloon A stage 2 deflates (output deactivated) to allow air out. There is a 0.5°C fixed differential on this logic. There is a 3-minute delay between deflations of stage 1 and stage 2 to maintain appropriate behavior. There is also a 3-minute delay between inflations of stage 2 and stage 1. This parameter is adjusted in 0.1°C increments from -10.0°C to 30.0°C.

F2(2): BALLOON A ST 3 RSP

This parameter establishes the relative temperature at which inflatable balloon A stage 3 will deflate. When TEMPERATURE ZONE A is higher than or equal to *DRT ZONE A* + BALLOON A ST 3 RSP, balloon A stage 3 deflates (output deactivated) to allow air out. There is a 0.5°C fixed differential on this logic. There is a 3-minute delay between deflations of stage 2 and stage 3 to maintain appropriate behavior. There is also a 3-minute delay between inflations of stage 3 and stage 2. This parameter is adjusted in 0.1°C increments from -10.0°C to 30.0°C.

F2(3): BALLOON A ST 4 RSP

This parameter establishes the relative temperature at which inflatable balloon A stage 4 will deflate. When TEMPERATURE ZONE A is higher than or equal to *DRT ZONE A* + BALLOON A ST 4 RSP, balloon A stage 4 deflates (output deactivated) to allow air out. There is a 0.5°C fixed differential on this logic. There is a 3-minute delay between deflations of stage 3 and stage 4 to maintain appropriate behavior. There is also a 3-minute delay between inflations of stage 4 and stage 3. This parameter is adjusted in 0.1°C increments from -10.0°C to 30.0°C.

Parameter 10:

F2(1): BALLOON B ST 2 RSP

This parameter establishes the relative temperature at which inflatable balloon B stage 2 will deflate. When TEMPERATURE ZONE B is higher than or equal to *DRT ZONE B* + BALLOON B ST 2 RSP, balloon B stage 2 deflates (output deactivated) to allow air out. There is a 0.5°C fixed differential on this logic. There is a 3-minute delay between deflations of stage 1 and stage 2 to maintain appropriate behavior. There is also a 3-minute delay between inflations of stage 2 and stage 1. This parameter is adjusted in 0.1°C increments from -10.0°C to 30.0°C.

F2(2): BALLOON B ST 3 RSP

This parameter establishes the relative temperature at which inflatable balloon B stage 3 will deflate. When TEMPERATURE ZONE B is higher than or equal to *DRT ZONE B* + BALLOON B ST 3 RSP, balloon B stage 3 deflates (output deactivated) to allow air out. There is a 0.5°C fixed differential on this logic. There is a 3-minute delay between deflations of stage 2 and stage 3 to maintain appropriate behavior. There is also a 3-minute delay between inflations of stage 3 and stage 2. This parameter is adjusted in 0.1°C increments from -10.0°C to 30.0°C.

F2(3): BALLOON B ST 4 RSP

This parameter establishes the relative temperature at which inflatable balloon B stage 4 will deflate. When TEMPERATURE ZONE B is higher than or equal to *DRT ZONE B* + BALLOON B ST 4 RSP, balloon B stage 4 deflates (output deactivated) to allow air out. There is a 0.5°C fixed differential on this logic. There is a 3-minute delay between deflations of stage 3 and stage 4 to maintain appropriate behavior. There is also a 3-minute delay between inflations of stage 4 and stage 3. This parameter is adjusted in 0.1°C increments from -10.0°C to 30.0°C.

Parameter 11:

BALLOON C ST 2 RSP

This parameter establishes the relative temperature at which inflatable balloon C stage 2 will deflate. When TEMPERATURE ZONE C is higher than or equal to *DRT ZONE C* + BALLOON C ST 2 RSP, balloon C stage 2 deflates (output deactivated) to allow air out. There is a 0.5°C fixed differential on this logic. There is a 3-minute delay between deflations of stage 1 and stage 2 to maintain appropriate behavior. There is also a 3-minute delay between inflations of stage 2 and stage 1. This parameter is adjusted in 0.1°C increments from -10.0°C to 30.0°C.

Parameter 12:

CHIMNEY DRT

This parameter establishes the desired room temperature for the chimney. When the CHIMNEY TEMPERATURE is below *CHIMNEY DRT* - 0.5°C, the chimney activator is closed by a timer. If the CHIMNEY TEMPERATURE is higher than *CHIMNEY DRT* + 0.5°C, the chimney activator is opened by a timer. If the CHIMNEY TEMPERATURE is between (*CHIMNEY DRT* - 0.5°C) and (*CHIMNEY DRT* + 0.5°C), the chimney activator won't move, this is the deadband. This parameter is adjusted in 0.1°C increments from 0.0°C to 40.0 °C.

Parameter 13:

CHIMNEY TIME ON

This parameter establishes the activation time of the chimney timer. When the CHIMNEY TEMPERATURE is outside the deadband, the chimney will open or close for a time (CHIMNEY TIME ON) and stay still for a time (CHIMNEY PERIOD - CHIMNEY TIME ON). This parameter is adjusted in 1 second increments from OFF, 1 to 1200 seconds.

F2: CHIMNEY PERIOD

This parameter establishes the time period of the chimney timer. This parameter is adjusted in 1 minute increments from 1 to 20 minutes.

Ex: CHIMNEY DRT = 72.0°C,
CHIMNEY TIME ON = 60 seconds,
CHIMNEY PERIOD = 2 min.

The chimney activator will react as follows:

- Higher than 72.5 °C, the chimney activator will open for a period of 1 minute and will not move for 1 minute. This cycle will continue as long as the CHIMNEY TEMPERATURE stays higher than 72.5°C.
- Between 71.5°C and 72.5°C, the chimney activator will not move.
- Under 71.5°C, the chimney activator will close for a period of 1 minute and will not move for 1 min. This cycle will continue as long as the CHIMNEY TEMPERATURE stays under 71.5°C

Parameter 14:

F2(1): DRYING TIME ON

This parameter establishes the time that the drying period will last. When the CLOCK reaches DRYING ZONE A (B or C) START all stages of the respective zone will activate without delay for a time DRYING TIME ON. This parameter is adjusted in 1-minute increments from OFF, 1 to 30 minutes.

F2(2): DRYING ZONE A START

This parameter establishes the drying activation time of balloon zone A. When set to OFF, there is no drying for balloon zone A. This parameter is adjusted in 15-minute increments from OFF, 00:00 to 23:45.

F2(3): DRYING ZONE B START

This parameter establishes the drying activation time of balloon zone B. When set to OFF, there is no drying for zone balloon B. This parameter is adjusted in 15-minute increments from OFF, 00:00 to 23:45.

F2(4): DRYING ZONE C START

This parameter establishes the drying activation time of balloon zone C. When set to OFF, there is no drying for balloon zone C. This parameter is adjusted in 15-minute increments from OFF, 00:00 to 23:45.

Parameter 15:

F2(1): ***MANUAL OVERRIDE BALLOON A STAGE 1***
F2(2): ***MANUAL OVERRIDE BALLOON A STAGE 2***
F2(3): ***MANUAL OVERRIDE BALLOON A STAGE 3***
F2(4): ***MANUAL OVERRIDE BALLOON A STAGE 4***
F2(5): ***MANUAL OVERRIDE BALLOON B STAGE 1***
F2(6): ***MANUAL OVERRIDE BALLOON B STAGE 2***
F2(7): ***MANUAL OVERRIDE BALLOON B STAGE 3***
F2(8): ***MANUAL OVERRIDE BALLOON B STAGE 4***

These parameters are used to manually control the corresponding output:

AUTO = Corresponding output follows the configuration parameters (automatic mode).
0 (OFF) = Corresponding output is forced to stay off (manual mode).
ON = Corresponding output is forced to stay on (manual mode).

Parameter 16:

F2(1): OPTION BALLOON A
F2(2): OPTION BALLOON B
F2(3): OPTION BALLOON C
F2(4): OPTION CHIMNEY

These parameters allows user to activate or deactivate the corresponding output and temperature alarm. If set to ON, corresponding temperature alarm is made possible and output will follow configuration parameters. If set to OFF, corresponding temperature alarm and output are deactivated. This parameter can be set to ON or OFF.

F2(5): OPTION SYSTEM CHECK

This parameter allow user to activate or deactivate the system check value. If set to ON, SYSTEM CHECK VALUE is activated. If set to OFF, SYSTEM CHECK VALUE is deactivated. In normal operation of the system, this parameter must be set to OFF. This parameter is adjusted to OFF or ON.

F2(6): SYSTEM CHECK VALUE

This parameter is used to simulate the temperature readings (A, B, C, chimney). If you wish to see the reaction of the system at a particular room temperature, just set this parameter to the temperature you want to test. **Be sure to put OPTION SYSTEM CHECK parameter back to OFF when the system check is not required anymore, otherwise the system will not follow the respective zone temperature**. The SYSTEM CHECK VALUE is adjusted in 0.1°C increments from -21.1°C to 75.9°C.

Parameter 17:

ALARM HI TEMP RSP

This parameter is used to adjust the high temperature limit. When a temperature (A, B, C, chimney) is higher than ALARM HI TEMP RSP, the alarm will be activated. This parameter is adjusted in 0.1°C increments from 0.0°C to 40.0°C.

F2: ALARM LO TEMP RSP

This parameter is used to adjust the low temperature limit. When a temperature (A, B, C, chimney) is lower than ALARM LO TEMP RSP, the alarm will be activated. This parameter is adjusted in 0.1°C increments from -20.0°C to -1.0°C.

F3: ALARM RELAY

This parameter is used to deactivate the alarm relay by setting it to OFF. Note that it is not recommended to deactivate the alarm relay.

Parameter 18:

SUPERVISOR CODE (ACCESS TO PROTECTED PARAMETERS)

When the supervisor code is ON, this means that the user has full access (FULL ACCESS ON) to all adjustable parameters. In other words, all parameters that are adjustable by the user, including the protected parameters, will be visible and flashing.

When the supervisor is OFF, this means that the user does not have full access (FULL ACCESS OFF) to all of the adjustable parameters. In other words, if certain parameters are hidden in the supervisor mode, they will remain invisible to the user, and the parameters protected by the supervisor code will not flash, indicating that no modification can be performed on these parameters.

Su: ON = FULL ACCESS ON

Su OFF = FULL ACCESS OFF

To alter the supervisor mode, follow the code entry procedure as indicated below:

SUPERVISOR CODE: 10 21 0

Code Entry procedure:

1. Go to the Supervisor code parameter using the upper and lower arrows. The LED display will show if the mode is FULL ACCESS ON (Su: ON) or FULL ACCESS OFF (Su: OFF).
2. To change the state of the supervisor mode (from Su : ON to Su : OFF or vice versa), press the F2 button. The LED display shows "1: 00:" At this moment, **enter the first number of your supervisor code.**
3. Press F2 again, and the LED display will show "2: 00:"
   At this moment, **enter the second number of your supervisor code**.
4. Press F2 again, and the LED display will show "3: 00:"
   At this moment, **enter the third number of your supervisor code.**
5. Finally, press F3 to validate the code entered.
6. If the code entered is incorrect, "ERR" will appear on the LED display.
   At this point, verify your supervisor code and retry the code entry procedure.

3. ALARM

The alarm relay is normally activated, but will be deactivated 5 seconds or more after a power failure or after one of the following events:

a. IC-410ND has lost its power or has become defective,
b. A probe (A, B , C or chimney) is outside the following limits `ALARM HI TEMP RSP` or `ALARM LO TEMP RSP`.
c. Any one of the temperature probes has become defective (short-circuit, open circuit, variation of 10.0°C/minute).

ATTACHMENTS

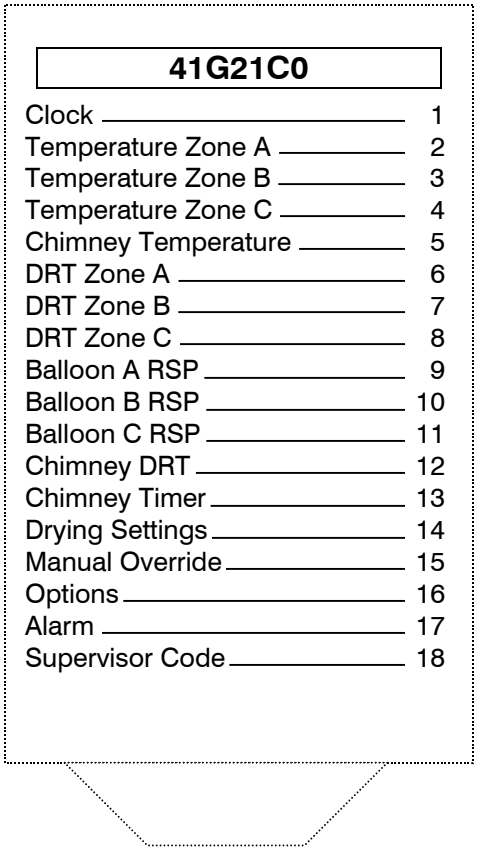
- Parameter Table
- Labels
- Wiring Diagram

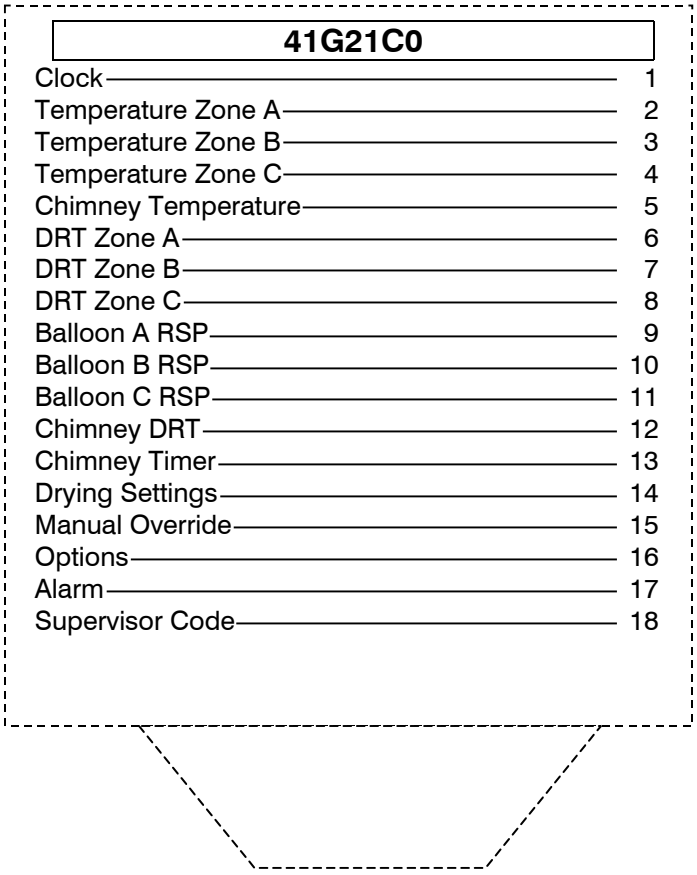
PARAMETER TABLE

DESCRIPTIONS		*	VALUES			
			MIN	MAX	DEFAULT	
1. CLOCK	**hh:mm**		0:00	23:59	0:00	
F2: Adjust Minutes	min	**none**	0	59	0	
F3: Adjust Hours	hr	**none**	0	23	0	
2. TEMPERATURE ZONE A	**deg. C**		-21.1	75.9	*****	*****
F2: Probe Input #	deg. C		-21.1	75.9	PRB1	*****
F3: Hi/Lo	deg. C	CLR	-21.1	75.9	*****	*****
3. TEMPERATURE ZONE B	**deg. C**		-21.1	75.9	*****	*****
F2: Probe Input #	deg. C		-21.1	75.9	PRB2	*****
F3: Hi/Lo	deg. C	CLR	-21.1	75.9	*****	*****
4. TEMPERATURE ZONE C	**deg. C**		-21.1	75.9	*****	*****
F2: Probe Input #	deg. C		-21.1	75.9	PRB3	*****
F3: Hi/Lo	deg. C	CLR	-21.1	75.9	*****	*****
5. CHIMNEY TEMPERATURE	**deg. C**		-21.1	75.9	*****	*****
F2: Probe Input #	deg. C		-21.1	75.9	PRB4	*****
F3: Hi/Lo	deg. C	CLR	-21.1	75.9	*****	*****
6. DRT ZONE A	**deg. C**	**none**	0.0	40.0	12.0	
7. DRT ZONE B	**deg. C**	**none**	0.0	40.0	12.0	
8. DRT ZONE C	**deg. C**	**none**	0.0	40.0	12.0	
9. BALLOON A RSP		**none**	1	3	1	
F2(1): Balloon A Stg 2 RSP	deg. C		-10.0	30.0	3.0	
F2(2): Balloon A Stg 3 RSP	deg. C		-10.0	30.0	5.0	
F2(3): Balloon A Stg 4 RSP	deg. C		-10.0	30.0	7.0	
10. BALLOON B RSP		**none**	1	3	1	
F2(1): Balloon B Stg 2 RSP	deg. C		-10.0	30.0	3.0	
F2(2): Balloon B Stg 3 RSP	deg. C		-10.0	30.0	5.0	
F2(3): Balloon B Stg 4 RSP	deg. C		-10.0	30.0	7.0	
11. BALLOON C STG 2 RSP	**deg. C**		-10.0	30.0	3.0	
12. CHIMNEY DRT	**deg. C**	**none**	0.0	40.0	10.0	
13. CHIMNEY TIME ON	**sec**		OFF, 1	1200	10	
F2: Chimney Period	min		1	20	5	
14. DRYING		**none**	1	4	1	
F2(1): Drying Time ON	min		OFF, 1	30	30	
F2(2): Drying Zone A Start	hh:mm		OFF, 0:00	23:45	0:15	
F2(3): Drying Zone B Start	hh:mm		OFF, 0:00	23:45	2:00	
F2(4): Drying Zone C Start	hh:mm		OFF, 0:00	23:45	4:00	

DESCRIPTIONS		*	VALUES			
			MIN	MAX	DEFAULT	
15. MANUAL OVERRIDE		**none**	1	8	1	
F2(1): Balloon A Stage 1		**none**	AUTO, 0	ON	AUTO	
F2(2): Balloon A Stage 2		**none**	AUTO, 0	ON	AUTO	
F2(3): Balloon A Stage 3		**none**	AUTO, 0	ON	AUTO	
F2(4): Balloon A Stage 4		**none**	AUTO, 0	ON	AUTO	
F2(5): Balloon B Stage 1		**none**	AUTO,0	ON	AUTO	
F2(6): Balloon B Stage 2		**none**	AUTO, 0	ON	AUTO	
F2(7): Balloon B Stage 3		**none**	AUTO, 0	ON	AUTO	
F2(8): Balloon B Stage 4		**none**	AUTO, 0	ON	AUTO	
16. OPTIONS		**none**	1	6	1	
F2(1): Option Balloon A	On/Off		OFF	ON	ON	
F2(2): Option Balloon B	On/Off		OFF	ON	ON	
F2(3): Option Balloon C	On/Off		OFF	ON	OFF	
F2(4): Option Chimney	On/Off		OFF	ON	OFF	
F2(5): Option System Check	On/Off		OFF	ON	OFF	
F2(6): System Check Value	deg. C		-21.1	75.9	20.0	
17. ALARM HI TEMP RSP	**deg. C**		0.0	40.0	15.0	
F2: Alarm Lo Temp RSP	deg. C		-20.0	-1.0	-10.0	
F3: Alarm Relay	On/Off		OFF	ON	ON	
18. SUPERVISOR CODE		See parameter description for details				

* Restriction legend of symbols	
none	Adjustable by the user
	Invisible to the user (visible & adjustable in supervisor mode)
	Read only to the user (adjustable in supervisor mode)
	Follows a growth curve (adjustable by user)
	Cannot be changed
CLR	Clear Hi and Lo probe readings


41G21C0
Clock 1
Temperature Zone A 2
Temperature Zone B 3
Temperature Zone C 4
Chimney Temperature 5
DRT Zone A 6
DRT Zone B 7
DRT Zone C 8
Balloon A RSP 9
Balloon B RSP 10
Balloon C RSP 11
Chimney DRT 12
Chimney Timer 13
Drying Settings 14
Manual Override 15
Options 16
Alarm 17
Supervisor Code 18


41G21C0
Clock 1
Temperature Zone A 2
Temperature Zone B 3
Temperature Zone C 4
Chimney Temperature 5
DRT Zone A 6
DRT Zone B 7
DRT Zone C 8
Balloon A RSP 9
Balloon B RSP 10
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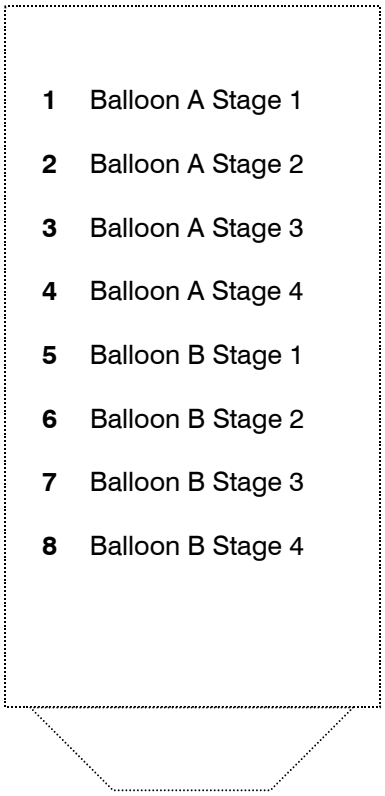
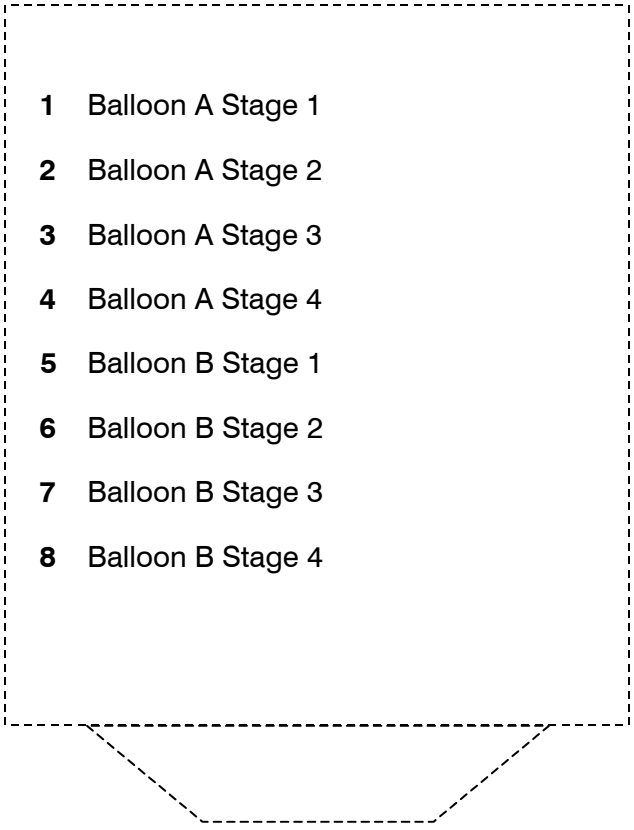
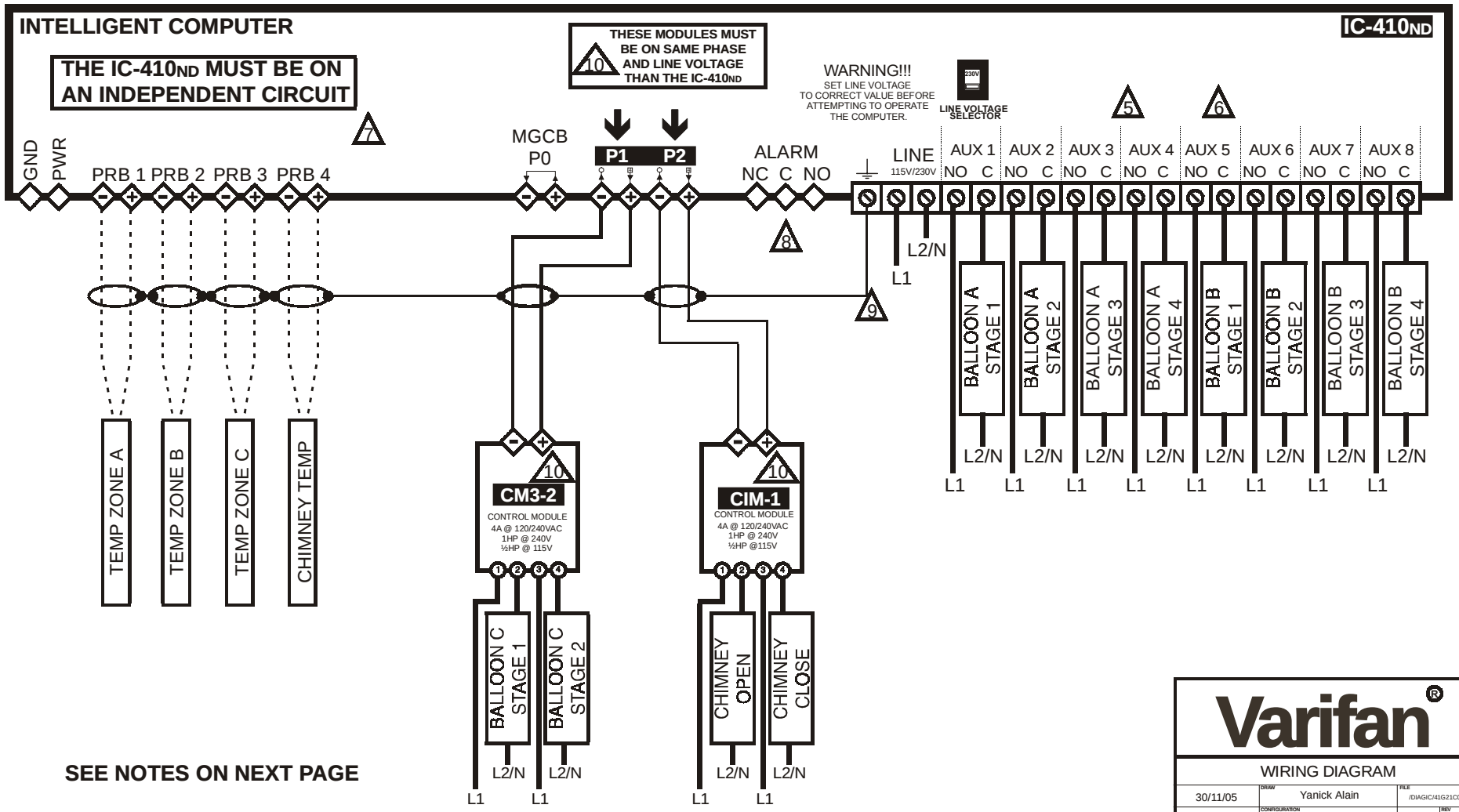
Chimney DRT 12
Chimney Timer 13
Drying Settings 14
Manual Override 15
Options 16
Alarm 17
Supervisor Code 18


1 Balloon A Stage 1
2 Balloon A Stage 2
3 Balloon A Stage 3
4 Balloon A Stage 4
5 Balloon B Stage 1
6 Balloon B Stage 2
7 Balloon B Stage 3
8 Balloon B Stage 4


1 Balloon A Stage 1
2 Balloon A Stage 2
3 Balloon A Stage 3
4 Balloon A Stage 4
5 Balloon B Stage 1
6 Balloon B Stage 2
7 Balloon B Stage 3
8 Balloon B Stage 4

WIRING DIAGRAM CONFIGURATION 41G21C0



41G21C0

Electrician's notes

wiring tips and hints (see guide for details)

1 ---------- (PROBE WIRING) SHIELDED WIRE AWG #18 WITH 16/30 STRANDING, 500FT/150M MAXIMUM LENGTH. (Ex.: DECA 73-310)
For other probe, refer to specific probe manual for appropriate maximum length and wire size or use AWG #18, 500FT/150M MAXIMUM LENGTH (whichever is shorter).

2 ———— (COMMUNICATION WIRING) SHIELDED LOW CAPACITANCE WIRE, (Capacitance between conductors @ 1Khz = 24PF/FT), TWISTED PAIR (8 twist/FT), AWG #18 TO 22, 750 FT/250 M MAX LENGTH. (Ex.: BELDEN 8761)

3 ▬▬▬ HIGH VOLTAGE WIRE INSTALLED ACCORDING TO LOCAL WIRING CODE.

4 INSTALL LOW VOLTAGE WIRES (PROBES, COMPUTER LINK OR POTENTIOMETER WIRES) AT LEAST 12 INCHES (30cm) AWAY FROM HIGH VOLTAGE WIRES (120/230VAC, 24VDC). ALWAYS CROSS HIGH AND LOW VOLTAGE WIRES AT A 90-DEGREE ANGLE.

△5 RELAYS: 10A @ 250VAC RESISTIVE, MOTOR 1HP @ 250VAC, 1/2HP 120VAC AT EACH OUTPUT (AUX 1-8)

△6 MAXIMUM 2 WIRES OF SAME SIZE PER BLACK TERMINAL, NO BIGGER THAN AWG #12, NO SMALLER THAN AWG #22.

△7 1 WIRE ONLY PER GREEN TERMINAL. USE WIRE CONNECTOR IF YOU WANT TO CONNECT MORE THAN 1 WIRE.

△8 CHECK INSTALLATION GUIDE FOR ALARM WIRING.

△9 USE SHIELD FOR SHIELDING PURPOSE ONLY. CONNECT THE SHIELD TO THE CONTROL CIRCUIT COMMON END ONLY⏚. NEVER LEAVE THE SHIELD UNCONNECTED AT BOTH ENDS. NEVER CONNECT BOTH ENDS OF THE SHIELD TO COMMON⏚. THE USE OF A SHIELD FOR ALL PROBES AND POTENTIOMETERS IS **MANDATORY**.

△10 THESE MODULES MUST BE ON SAME POWER PHASE AND LINE VOLTAGE AS THE CONTROLLER.